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Running Head: Violation reactions are associated with culture

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Abstract

Children from the age of three understand social norms as such, and enforce these norms in interactions with others. Differences in parental and institutional education across cultures make it likely that children receive divergent information about how to act in cases of norm violations. In the present study, we investigated whether cultural values are associated with the ways in which children react to norm violations. We tested 80 bicultural 3-year-old children with a norm enforcement paradigm and analyzed their reactions to norm violations. The reactions were correlated to the children's parental cultural values using the GLOBE scales and these results show that parental culture was associated with children's reactions to norm violations. The three strongest correlations were found for institutional collectivism, performance orientation and assertiveness.

Keywords: culture, norm enforcement, preschoolers, values

How preschoolers react to norm violations is associated with culture

Humans interact with each other socially. One way in which social interactions are guided and controlled is by means of social norms. Members of a society share a set of social norms, meaning they agree on how things are done (Bruner, 1993). Due to the informal nature of norms as opposed to laws (McAdams, 1997) norms may unravel if norm violators are not punished by members of the group (Kendal, Feldman, & Aoki, 2006). People punish norm violators not only in small-scale groups where they know their interaction partners very well but even in anonymous one-shot interactions, a behavior which has been called “altruistic punishment” (Boyd, Gintis, Bowles, & Richerson, 2003). Punishment of norm violators has been shown to assist with sustaining cooperative behavior in human societies, whereas the absence of punishment leads to decreased cooperation (Boyd et al., 2003; Boyd & Richerson, 1992).

The strong cohesion of social norms within a culture makes cross-cultural differences of morality and its manifestations very likely (Tomasello, 2016). Cultural learning mechanisms will cause members of social groups to adopt similar values and beliefs about how other group members will evaluate their behavior (N. Henrich & Henrich, 2007; Sober & Wilson, 1998). In fact, studies in adults have uncovered cross-cultural differences in cooperative games like the ultimatum game or the dictator game (Joseph Henrich et al., 2005). Large differences have also been revealed using the public goods game, where the willingness of participants to share their private resources with the public is assessed (Gächter & Herrmann, 2009; Herrmann, Thöni, & Gächter, 2008; Kocher, Martinsson, & Visser, 2012). When playing the public goods game, members of some societies are much more likely to virtually not punish contributors, while others attach the same importance to this as anti-social punishment (Herrmann et al., 2008).

In the present study, we focused on the association between cultural values and norm enforcement in early ontogeny. During development early in life, children not only learn to do things but they learn to do things the right way – the way “we do things” (Bruner, 1993). During the preschool years, children start to understand that doing something the right way constitutes a social norm (Kalish, 1998; Piaget, 1932; Smetana, 1981; Tomasello & Vaish, 2013; Turiel, 1983), and they learn to enforce these norms when they encounter norm violators (Casler, Terziyan, & Greene, 2009; Köymen et al., 2014; Rakoczy, Brosche, Warneken, & Tomasello, 2009; Rakoczy, Warneken, & Tomasello, 2008; Schmidt, Rakoczy, & Tomasello, 2012). As a result, children are thought to identify with the social norms of their culture in a way that transcends their own individual interests (Schmidt, Rakoczy, & Tomasello, 2011). However, so far only little is known about norm enforcement among pre-school children with different cultural backgrounds. One previous study indicates that school-aged children with different religious backgrounds differed in their evaluation of norm violations (Nisan, 1987). Traditional Jewish children took norm violations more seriously than modern Jewish children. Unfortunately, the particular cultural differences that guide differences between these groups (Gelfand et al., 2011; Hofstede, 2001; R. J. House, Hanges, Javidan, Dorfman, & Gupta, 2004; Schwartz, 1999) remain unclear. When looking at the precursors of understanding social norms in the sense of benevolent behaviors like collaboration, helping, and sharing, we have stronger evidence of cross-cultural differences. Children differ in how they divide resources between themselves and other individuals (Blake et al., 2015; B. R. House et al., 2013; Rochat et al., 2009; Schäfer, Haun, & Tomasello, 2015). Some of these differences have been attributed to differences in cultural values: More fairness in distributive justice is evident in children growing up in societies with more collective values (Rochat et al., 2009). The interplay of particular cultural values and norm enforcement has yet to be investigated.

Due to differences in teaching across cultures, ranging from explicit verbal instruction to the mere provision of learning opportunities (Rogoff et al., 1993), children receive differential information about how to act in cases of norm violations in different countries. The age group of interest in the present study was preschoolers. According to the interdependence hypothesis for the evolution of human morality (Tomasello, 2016), children younger than the age of three do not yet understand social norms as the shared expectations of "our" social group. Before the age of three, children behave with sympathy and fairness towards others and conform to the actions and imperatives of others. By age three, children start to express their cultural identity: They actively enforce social norms, understand themselves as members of a group and show loyalty to that group. This is a point during human ontogeny when culture becomes critical in social interaction. Interactions with adults and peers are believed to encourage the internalization of values to differing degrees (Tomasello, 2016). For example, more authoritarian parenting styles lead to less internalization of values combined with more strategic norm following, but more inductive parenting styles lead to more internalization of values and, consequently, an increase in self-regulation (Hoffman, 2000).

In the present study, we investigated whether preschoolers' reactions to an observed norm violation was associated with their culture. This question is approached by means of an exploratory procedure since no previous findings are available (Wagenmakers, Wetzels, Borsboom, van der Maas, & Kievit, 2012). To examine cross-cultural differences, we tested 3-year-old simultaneous bilingual children from intermarriage families. Children of intermarriage families are raised within a mixture of the influences of the two cultures of their parents. The enculturation the child receives from both parents takes place in the same residence country. In addition, the enculturation from the parent born outside the child's residence country is thought to be assisted by remote enculturation (Ferguson, Costigan,

Clarke, & Ge, 2016). Children from such intermarriage parents are competent in both of their cultures (Padilla, 2006), develop a multi-ethnic identity (C. W. Stephan & Stephan, 1989) and their cultural values and attitudes lie between those of the immigrant culture and the native culture of the country of residence (Kalmijn, 2015; W. G. Stephan & Stephan, 1991).

The assessment of parental cultural values was based on the dimensions of the GLOBE project (R. J. House et al., 2004). This project identified a system that includes 9 cultural value dimensions: performance orientation, uncertainty avoidance, in-group collectivism, power distance, gender egalitarianism, humane orientation, institutional collectivism, future orientation, and assertiveness (see Table 1). The GLOBE project assessed these values in over 60 countries. The scales have good reliability and validity with other cultural scales like Hofstede's cultural dimensions, Schwartz's value scales and the World Values Survey. The scales were designed to explain "between-society" differences. Country scores were identified to quantify the existence of each present cultural dimension ("as is" scores) as well as to determine values for how the country aspires to be ("should be" scores). We assessed the cultural values to which parents individually aspired at the time of the study ("should be"). We did this because the birth country can only serve as an approximation, and the individual variability of values within a society is great (Fischer & Boer, 2015; Fischer & Schwartz, 2011).

To assess the children's norm enforcement, we applied a previously introduced paradigm in which children were exposed to novel actions (Schmidt et al., 2011). In this study, 3-year-old children witnessed a novel action being performed by one experimenter and imitated that action. A hand puppet then used the objects to perform an alternative action. The children protested against the hand puppet's deviation from the demonstrated action. The authors reasoned that 3-year-old children inferred normativity even though the first experimenter did not use any normative language during his demonstration, i.e. he did not

verbally mark his action as a rule (e.g. “This is how this should be done”). The non-verbal nature of the paradigm makes it particularly valuable for children with different cultural backgrounds and with bilingual language acquisition. Bilingual children will not be disadvantaged if the test is conducted in their weaker language, in which they have a smaller vocabulary (Genesee, Nicoladis, & Paradis, 1995).

We coded children’s reactions to the observed norm violations in terms of protest behaviors (Rakoczy et al., 2009, 2008; Schmidt et al., 2011; Wyman, Rakoczy, & Tomasello, 2009) and in terms of indirect communication (Ting-Toomey, 1999) that is often found in cultures with low assertiveness and low performance orientation (R. J. House et al., 2004). We used the most frequently shown reaction to the norm violations as a dependent variable, because our study intends to uncover the associations between culture and social norms. Previous research has illustrated that cultural in-group homogeneity is promoted by majority behaviors, conformity and hyper-conformity to the most common behavior (Boyd & Richerson, 2009; Efferson, Lalive, Richerson, McElreath, & Lubell, 2008; Flynn & Whiten, 2008; Haun, van Leeuwen, & Edelson, 2013; Joe Henrich & Boyd, 1998; Whiten & Flynn, 2010). For this reason, we deviate from hierarchical coding procedures in the field of norm enforcement (e.g. Rakoczy et al., 2008): In the hierarchical coding procedure, even if a child said “Stop!” (imperative protest) ten times and “False!” (normative protest) only once, the child receives the code “normative protest”. Because cultural homogeneity is expressed by majority behaviors we were interested in the most common way, a child reacts to a norm violation. Thus, we coded the described pattern of behavior with the code “imperative protest”.

Given that previous research that reports differences in cooperative behavior is based on the influence of parental socialization practices and its cultural variation, it is likely that

parental cultural values are associated with their children's patterns of how they react to norm violations.

Table 1

Definitions of the cultural dimensions of GLOBE and characteristics of societies with high and low scores in this dimension (R. J. House et al., 2004)

Dimension	Definition	High-scoring societies have characteristics such as	Low-scoring societies have characteristics such as
Assertiveness	is the degree to which individuals in organizations or societies are assertive, confrontational, and aggressive in social relationships.	Value competition, success, and progress. Communicate directly and unambiguously. Try to have control over the environment. Expect subordinates to take initiative. Build trust on basis of calculation.	Value cooperation and warm relationships. Communicate indirectly; try to "save face". Try to be in harmony with the environment. Expect subordinates to be loyal. Build trust on basis of predictability.
Future Orientation	is the degree to which individuals in organizations or societies engage in future-oriented behaviors such as planning, investing in the future, and delaying individual or collective gratification.	Propensity to save now for the future. Emphasize working for long-term success. Organizations tend to be flexible and adaptive. View material success and spiritual fulfillment as an integrated whole.	Propensity to spend now, rather than save. Prefer gratification as soon as possible. Organizations tend to be inflexible, maladaptive. View material success and spiritual fulfillment as separate, requiring trade-offs.
Gender Egalitarianism	is the extent to which an organization or a society minimizes gender role differences while promoting gender equity and the equality of genders.	More women in positions of authority. Less occupational sex segregation. Similar levels of educational attainment for males and females. Afford women a greater decision-making role in community affairs.	Fewer women in positions of authority. More occupational sex segregation. A lower level of female educational attainment compared to that of males. Afford women little or no decision-making role in community affairs.
Humane Orientation	is the degree to which individuals in organizations or societies encourage and reward individuals for being fair, altruistic, friendly, generous, caring, kind to others, and exhibiting and promoting altruistic ideals.	The interests of others are important. People are motivated primarily by a need for belonging and affiliation. Members of society are responsible for promoting the well-being of others. Child labor is limited by public sanctions. People are urged to be sensitive to all forms of racial discrimination.	One's own self-interest is important. People are motivated primarily by a need for power and material possessions. The state provides social and economic support for individuals' well-being. Child labor is an issue of low importance. People are not sensitive to all forms of racial discrimination.
Institutional Collectivism	reflects the degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action.	Members assume that they are highly <i>interdependent</i> within the organization. Group loyalty is encouraged, even if this undermines the pursuit of individual goals. The society's economic system tends to maximize the interests of collectives. Rewards are driven by seniority, personal needs, and/or within-group equity.	Members assume that they are largely independent of the organization. Pursuit of individual goals is encouraged, even at the expense of group loyalty. The society's economic system tends to maximize the interests of individuals. Rewards are driven very largely by an individual's contribution to task success. Critical decisions are made by

In-Group Collectivism	reflects the degree to which individuals express pride, loyalty, and cohesiveness in their organizations, families, circle of close friends, or other such small groups.	Critical decisions are made by groups. Duties and obligations are important determinants of social behavior. A strong distinction is made between in-groups and out-groups. People emphasize relatedness with groups. The pace of life is slower. Love is assigned little weight in marriage. Value training and development. Value competitiveness and materialism. View formal feedback as necessary for performance improvement. Value what one does more than who one is. Expect direct, explicit communication.	individuals. Personal needs and attitudes are important determinants of social behavior. Little distinction is made between in-groups and out-groups. People emphasize rationality in behavior. The pace of life is faster. Love is assigned great weight in marriage. Value societal and family relationships. Value harmony with the environment. View formal feedback as judgmental and discomfiting. Value who one is more than what one does. Expect indirect, subtle communication.
Performance Orientation	refers to the extent to which high-level members of organizations and societies encourage and reward group members for performance improvement and excellence.		
Power Distance	is the degree to which members of an organization and society encourage and reward unequal distribution of power with greater power at higher levels.	Society is differentiated into classes. Power seen as providing social order. Upward social mobility is limited. Resources available to only a few. Information is localized and hoarded.	Society has a large middle class. Power linked to corruption and coercion. Upward social mobility is common. Resources are available to almost all. Information is widely shared.
Uncertainty Avoidance	is the extent to which members of an organization or society strive to avoid uncertainty by relying on established social norms, rituals, and bureaucratic practices to decrease the probability of unpredictable future events that could adversely affect the operation of an organization or society, and also to remedy the potential adverse effects of such unpredictable future events.	Use formality in interactions with others. Are orderly and keep meticulous records. Rely on formalized policies and procedures. Take moderate, carefully calculated risks. Show strong resistance to change.	Use informality in interactions with others. Are less orderly and keep fewer records. Rely on informal norms for most matters. Are less calculating when taking risks. Show only moderate resistance to change.

Methods

Participants

Eighty bicultural children (41 female, $M = 42$ months, $SD = 2$ months) took part in the study. All children were raised in Switzerland and were exposed to Swiss German and a second language from birth. All children had one Swiss parent and one parent from a non-Swiss country. The non-Swiss parents were born in 28 different countries. Table 2a provides an overview of the different countries in which parents were born.

Table 2a

Countries parents were born in

Country	Fathers	Mothers
Armenia	1	0
Australia	1	0
Belgium	1	0
Bosnia	0	1
Cuba	1	0
Czech Republic	0	1
France	3	2
Georgia	1	0
East Germany	3	2
West Germany	4	4
Greece	0	1
Guatemala	1	0
Italy	3	3
Malaysia	0	1
Mexico	1	1
Morocco	1	0
Netherlands	2	2
Nigeria	1	0
Poland	0	1
Serbia	1	1
Spain	2	1
Sweden	1	0
Switzerland	42	52
Switzerland (French)	4	1
Switzerland (Italian)	2	3
UK	1	1
Ukraine	0	1
USA	1	1

Materials and Procedure

We used the same procedure as in the ostensive communication recognizing condition by Schmidt and colleagues (2011). We did not include the control condition, as the original study established that the reaction to the ostensive communication recognizing condition is normative behavior. With this procedure, two warm-up trials (pencil task, disk-and-peg task)

and three test trials were administered. Materials and actions for the trials were similar to the original study; see Figure 1 for an overview of the test trials.

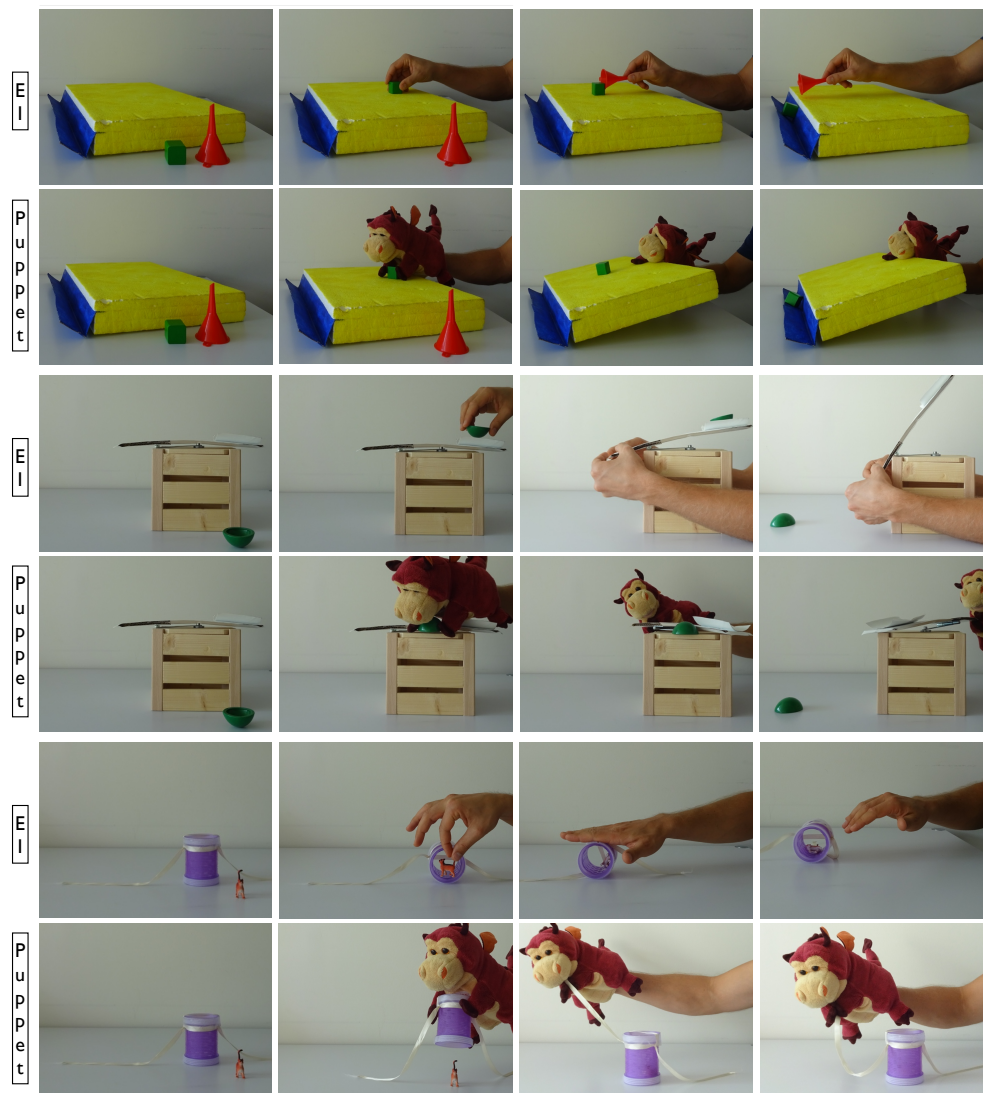


Figure 1. Actions performed by E1 (first, third, fifth row) and alternative actions performed by the hand puppet (second, fourth, sixth row) for the three test trials.

Every trial was administered in the same way: (i) The first experimenter (E1) performed an action while the hand puppet was absent (for example putting a building block on a board, using a suction head to push a building block across the board into a gutter). This action was performed as in the original study: E1 appeared to know and recognize the objects; E1's marking of the action made it look like they were performing an existing action normally performed with the objects, but importantly, E1 never used any explicit normative language to

establish this behavior as a rule (Schmidt et al., 2011). (ii) Afterwards, E1 handed the objects to the child and the child was given the opportunity to imitate the actions observed. (iii) Finally, the hand puppet awoke and performed an alternative action with the objects (putting the building block on the board, lifting board with its mouth so that the building block slid into the gutter).

Cultural values. From the GLOBE project, we used the values of all nine cultural dimensions: Power orientation, In-group collectivism, Gender egalitarianism, Uncertainty avoidance, Future orientation, Institutional collectivism, Human orientation, Performance orientation, and Assertiveness. Both parents independently completed the GLOBE questionnaire on their should-be status, allowing us to estimate the cultural values they aspired to individually. We subsequently averaged the parental values because the cultural values of intermarriage children lie between those of the immigrant culture and the native culture of the country of residence (Kalmijn, 2015; W. G. Stephan & Stephan, 1991).

Coding

We coded children's reactions to the norm violations for the experimental phase (iii) where the hand puppet performed the alternative action. We coded every reaction of the child between the hand puppet's first touch of any of the objects until 5 seconds after the hand puppet finished its actions. Reactions were separated if children waited more than one second between two behaviors.

For *violation reaction*, we distinguished between normative protest, imperative protest, descriptive protest, and acceptance, as in previous studies on norm violations (Rakoczy et al., 2009, 2008; Schmidt et al., 2011; Wyman et al., 2009). We further coded the behaviors of waiting and indication, accounting for indirect communication patterns (Ting-Toomey, 1999) as found in cultures with low assertiveness and performance orientation (R. J. House et al., 2004). Normative protest was characterized by explicit normative language ('No! You must

take this one!’). Imperative protest was characterized by behavior that aimed at intervening in the wrong actions but without normative language (‘Don’t rotate!’). Descriptive protest was coded for behavior that described the deviation verbally or reenacted the correct action. Behavior was coded as indication when the child showed some form of an understanding of the norm violation, but was not explicit enough to be coded as one of the previous forms, like smiling and ambiguous questions (‘What are you doing?’). Behavior was coded as acceptance when the child helped or encouraged the hand puppet to perform the alternative action (Wyman et al., 2009). Behavior was coded as waiting when the child was undecided about what to do and did not meet any of the other categories. The violation reaction was ordinally ordered (acceptance, waiting, indication, descriptive protest, imperative protest, normative protest).

In a more conservative coding of *protest reaction* we coded all indirect communication patterns (acceptance, waiting, indication) as no protest followed by descriptive protest, imperative protest and normative protest. We added this conservative measure used in previous studies on normativity because indirect communication patterns are more ambiguous and more difficult to interpret.

One quarter of the sample was coded for reliability by a second blind coder. Interrater reliability was high for violation reaction: protest form, $\kappa = .914$, number of protest acts, $\kappa = .978$.

Analyses

We calculated the most frequent violation reaction for children’s behavior. If two violation reactions were equally frequent, the higher one was chosen. The dependent variable was ordinally ordered (acceptance, waiting, indication, descriptive protest, imperative protest, normative protest). For cultural values, we took the mean of both parental values. See Table 2b for an overview of the intercorrelations and the variability of the cultural should-be values.

Table 2b

*Summary of Intercorrelations, Means, and Standard Deviations for Scores on the Should-be Values of the Participants, * $p < .05$.*

Value	1	2	3	4	5	6	7	8	9	<i>M</i>	<i>SD</i>
1. Uncertainty Avoidance	-	.40*	.27*	-.13	-.09	.00	.24*	-.01	.01	3.46	0.71
2. Future Orientation	.40*	-	.20	-.06	-.08	.32*	.29*	-.02	.31*	4.23	0.72
3. Power Distance	.27*	.20	-	-.14	-.25*	.01	.08	-.12	.38*	2.26	0.50
4. Institutional Collectivism	-.13	-.06	-.14	-	.20	-.30*	.02	.28*	-.17	4.57	0.53
5. Human Orientation	-.09	-.08	-.25*	.20	-	-.08	.24*	.33*	-.27	5.89	0.38
6. Performance Orientation	.00	.32*	.01	-.30*	-.08	-	.15	.02	.37*	5.62	0.57
7. In-group Collectivism	.24*	.29*	.08	.02	.24*	.15	-	-.01	.21	5.21	0.66
8. Gender Egalitarianism	-.01	-.02	-.12	.28*	.33*	.02	-.01	-	-.06	5.31	0.40
9. Assertiveness	.01	.31*	.38*	-.17	-.27	.37*	.21	-.06	-	2.65	0.58

Results

The most frequent violation reaction was waiting ($n = 24$, 30.0%), followed by descriptive protest ($n = 16$, 20.0%), indication ($n = 15$, 18.8%) imperative protest ($n = 14$, 17.5%) and finally normative protest ($n = 11$, 13.7%). For an overview of the possible associations between culture and violation reaction, we descriptively plotted the cultural dimensions of the parents together with the reactions of the children. We built three groups of the parental values (low, medium, high) using the 33rd and 66th percentiles of the values in the sample as cutoffs, and map the percentage of children in their form of protest (see Figure 2).

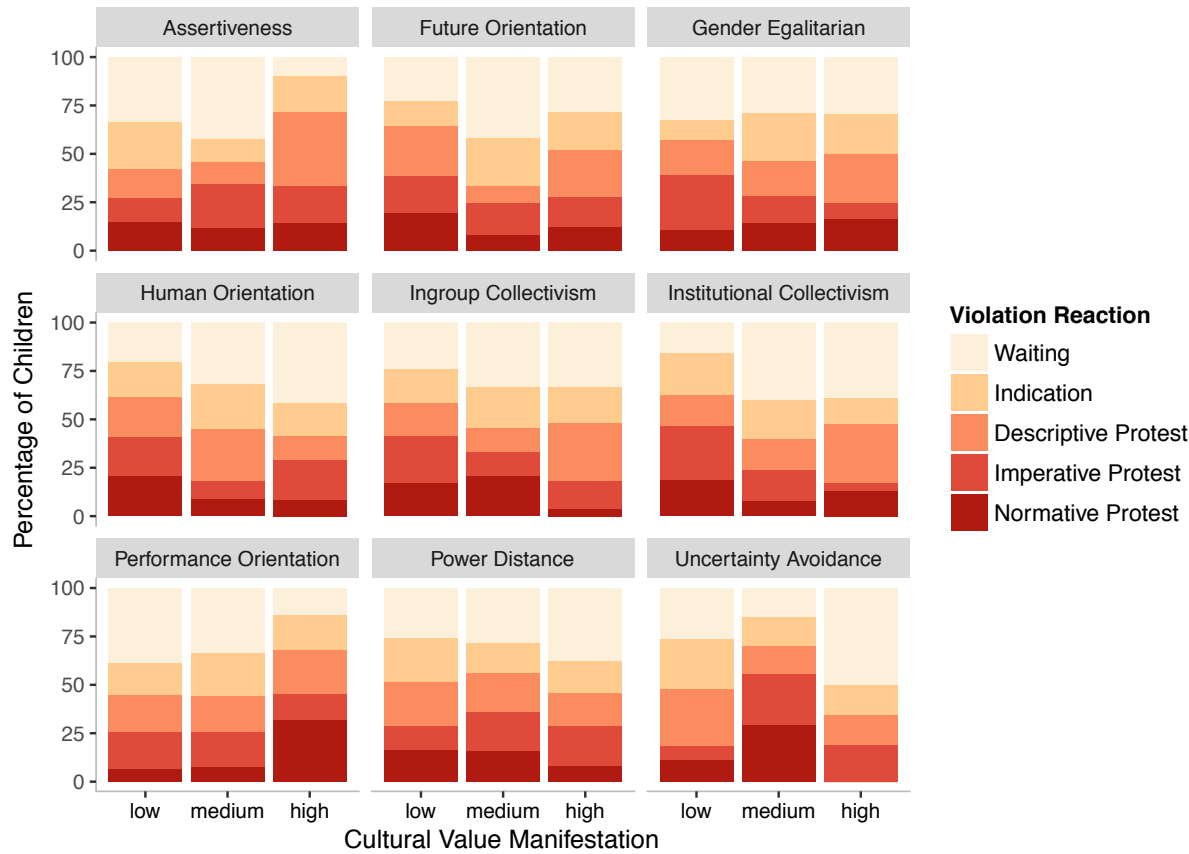
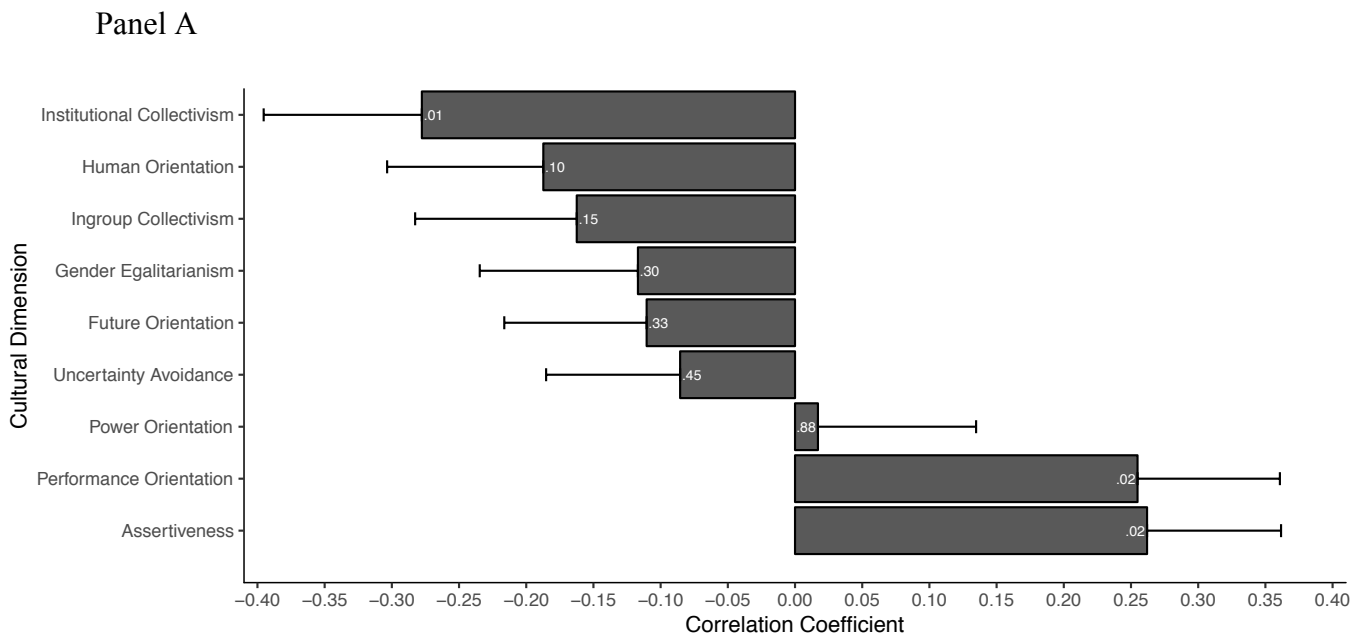


Figure 2. Violation reactions in the individual cultural dimensions. Low, medium and high manifestations were assigned using the 33rd and 66th percentiles.

Next, we report on the analysis of the potential associations between culture and children’s reactions to norm violations. Due to the fact that culture was assessed using nine cultural dimensions that are not independent from each other (see Table 2b), this analysis required a test of association between the outcome violation reaction and the entire set of cultural dimensions. Potter and Griffiths (2006) review possible tests, and suggest using Fisher’s statistics with a permutation test. Accordingly, we ran individual Spearman correlations between the form of protest and the nine cultural dimensions and combined the separate *p*-values using Fisher’s function (Fisher, 1932). To account for the relatively broad age range of the children tested and the different levels of parental education ($M = 8.4$, $SD = 2.6$; with 10 being equivalent to a university degree), we controlled for these two variables in

the Spearman correlations. We performed a permutation test (Potter & Griffiths, 2006) to compute the p -value. Using 10,000 random permutations, we found evidence for the association between culture and the *violation reaction*, $\chi^2 (N = 18) = 39.459, p = .008$. Figure 3 depicts partial Spearman correlation coefficients between the individual cultural dimensions and *violation reaction*, with standard errors calculated by bootstrapping ($N = 1000$). The strongest correlation coefficients for *violation reaction* were found for institutional collectivism ($r = -.278, p = .012$), assertiveness ($r = .262, p = .018$) and performance orientation ($r = .255, p = .022$).

For the more conservative *protest reaction* we also found evidence for the association with culture, $\chi^2 (N = 18) = 35.286, p = .027$. The strongest correlation coefficients for *protest reaction* was found for institutional collectivism ($r = -.245, p = .028$), assertiveness ($r = .241, p = .030$), performance orientation ($r = .224, p = .045$).



Panel B

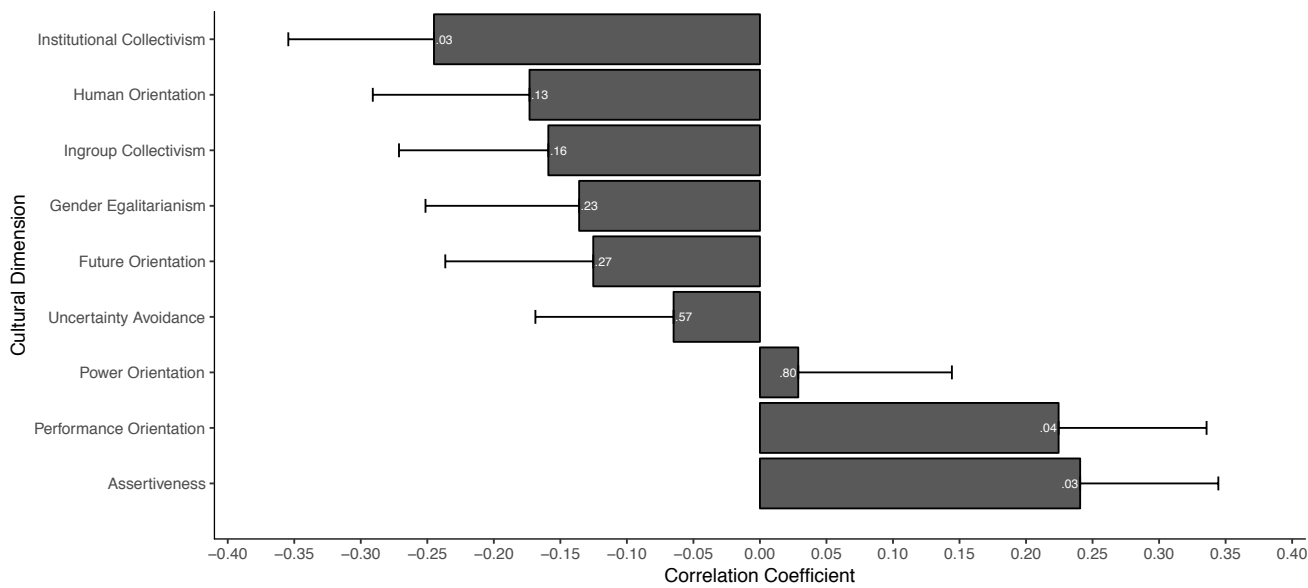


Figure 3. Correlation coefficients and standard error for the associations between the cultural dimensions and the *violation reaction* (Panel A) and *protest reaction* (Panel B), *p*-values are indicated in the bars.

Discussion

In the current study, we investigated how parents' cultural values are associated with their preschool children's reactions to norm violations. We found that the cultural values were indeed associated with the preschoolers' reactions. In our sample, the strongest correlations between culture and the violation reaction as well as the more conservative protest reaction were found for the dimensions of institutional collectivism, performance orientation, and assertiveness.

These results add to previous research showing enforcement of first-order norm violations (Casler et al., 2009; Köymen et al., 2014; Rakoczy et al., 2009, 2008; Schmidt et al., 2012). They are the first to show that the way 3-year-old preschoolers react to norm violations committed by other members of society is associated with the cultural values of their parents. What remains as a question for further investigation is how exactly parental cultural values translate to children's behavior when they are confronted with norm violations.

When looking at the three dimensions with the greatest association, some pathways appear to provide possible explanations. Members of societies which score highly in terms of institutional collectivism assume that they are highly interdependent within their group, and thus critical decisions are made by the group, not at the individual level. We found that children of such parents intervened less often by strongly enforcing norms, but more often at an implicit level. Group loyalty was weighted more strongly than the individual realization of norm enforcement. Similarly, children of parents with low values in assertiveness more often waited or displayed ambiguous reactions (indication). One potential explanation for this result is that these children strongly value cooperation and warm relationships. They communicate indirectly and try to be in harmony with their interaction partners. In contrast, parents with high performance orientation encourage and reward performance improvement and excellence. Children of such parents viewed formal feedback as necessary for the hand puppet's performance to be able to improve, and gave this feedback in a direct and explicitly communicative way. Children might have demonstrated the adequacy of their cultural competence and avoided negative evaluations from others for not enforcing the norm (Gong & Fan, 2006). These explanations are only preliminary and need to be confirmed by further samples.

The current findings support previous findings on cross-cultural differences in communication styles. Cultures differ in terms of whether they are more likely to use direct or indirect communication. Indirect communication can be achieved through non-verbal behavior, verbal indirect meaning, or vocal emotion (Ambady, Koo, Lee, & Rosenthal, 1996) and is constructed in a way that it is not possible to attribute only one clear communicative intention to the speech act (Brown & Levinson, 1987). This preference for communication styles is mirrored in the difference between low-context and high-context cultures. High-context means that most of the information of a message is either present in the physical

context or internalized in the person but very little information is in the coded, explicit, transmitted part of the message (Hall, 1989). High-context cultures are characterized by more frequent indirectness of communication (Hall, 1983). The three cultural dimensions with the greatest association with children's violation reactions in our study (assertiveness, institutional collectivism, and performance orientation) are often reported when looking at the difference between direct and indirect communication. Previous research supports our findings that collectivistic cultures communicate more indirectly and subtly (Ambady et al., 1996; Erdogan & Liden, 2006; Kim, 1994; Okabe, 1983), than do cultures with low performance orientation (R. J. House et al., 2004). More assertive communication was found in low-context cultures like the US, and less assertive communication in high-context cultures like Japan (Singhal & Nagao, 1993). Our results furthermore show that these cultural differences in communication are already detectable in preschoolers when they are confronted with norm violations. Further studies are needed to explore whether other covariates might play a role in the interplay between culture and reactions to norm violations. In the context of communication, one potential covariate is the level of children's linguistic skills. Normative protest includes modal verbs and more intricate sentence structures than imperative protest or descriptive protest, and so children with lower grammar skills might not have had the opportunity to use higher protest reactions.

The present findings add to previous studies assessing the ontogeny of cross-cultural differences. Early on in life, maternal socialization goals and scaffolding styles already shape toddlers' prosocial helping behavior (Köster, Cavalcante, Carvalho, Resende, & Kärtner, in press). In the context of norm violations, previous research has shown a possible way through which cultural differences lead to children's norm enforcement (Hardecker & Tomasello, in press). These authors suggest that when children are enforcing norms, they are primarily imitating adults' enforcement of those norms. In an experimental setting, Hardecker and

Tomasello (in press) showed that children's norm enforcement emerges in 2-year-old children based on their capacities to imitate the enforcement behavior of an adult in the same situation in which they observed it. Along these lines, children's imitation skills (Carpenter, Akhtar, & Tomasello, 1998; Gergely & Csibra, 2006; Meltzoff, 1995) are seen as the basis for behavior that is similarly used in the domain of norms. This suggests that the importance and the manifestation of norm enforcement depend largely on the caregivers' and surrounding people's attitudes toward the world. They shape how children understand norms using their cultural understanding of others' actions (Hardecker & Tomasello, in press). Whether children's reaction are only associated with the cultural values of their parents as shown in this study, or whether other caregivers or surrounding people show a similar association with norm enforcement, has to be investigated in future studies.

Similarly, future studies need to investigate whether these first exploratory analyses can be confirmed in different samples and different cultures. Further samples are needed to detect which of the cultural dimensions shows the strongest association in the domain of norm enforcement or whether the dimensions interact with each other. Since the three strongest dimensions found in our study were all interrelated, it might be that just one of them is driving the association to the form of protest. In addition, reactions to norm violations could be investigated in distinct cultures. One disadvantage of our bicultural sample in comparison to a sample from distinct cultures might lie in the fact that the effect size in our study undermines the true strength of cultural association, due to the fact that every child had one Swiss-German parent. As a consequence, cultural variation decreases and is biased towards the Swiss culture. However, cultural values are highly intertwined with social, political, economic, and ecological circumstances (Fischer & Boer, 2016). The study by Henrich and colleagues (2005) reports that part of the cross-cultural differences in cooperative games is attributed to differences in economic organization and the structure of social interactions. In our sample, all

of the children were raised in at least the same political, economic, and ecological system. Accordingly, all differences that are normally intertwined in cross-cultural group research are less pronounced in our data. Since we found that culture was associated with children's reactions to norm violations, our finding can only be attributed to these other confounding variables to a minor degree. Hence, this makes a strong claim that cultural aspects are associated with our interactions. Previous research confirmed that differences in norm enforcement in the domain of cooperation can be found even within societies or countries (Kocher et al., 2012). The authors used the public goods game to examine communities from different socio-demographic and population groups within the same city (Cape Town, South Africa). Schoolchildren from African communities contributed and punished significantly more than children from the other communities. This finding provides further evidence that cultural values differ not only between, but also within countries (Fischer & Schwartz, 2011).

Taken together, these facts support the interdependence hypothesis for the evolution of human morality (Tomasello, 2016). Consequently, the experience of three years of exposure to different cultural norms and to different reactions of caregivers to norm violations is already associated with different interactions with our peers, and especially with whether and how we tell norm violators that “that’s not how we do it” (Bruner, 1993).

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